

HIGHER MARINE FUNGI OF LAKSHADWEEP ISLANDS AND A NOTE ON *QUINTARIA LIGNATILIS*

S. CHINNARAJ

Biological Oceanography Division-National Institute of Oceanography
Dona Paula, Goa-403004, India.

ABSTRACT - The dead and decayed mangroves, Seagrasses and drift wood samples collected from Lakshadweep Islands were examined for fungi and yielded 32 species of higher marine fungi which includes 23 Ascomycetes, 1 Basidiomycete and 8 Deuteromycetes. This is the first report of higher marine from Lakshadweep Islands. A gelatinous sheath has been observed in fresh ascospores of *Quintaria lignatilis*.

RÉSUMÉ - Un premier inventaire sur le littoral des îles Lakshadweep a permis de répertorier 32 espèces de champignons dont 23 Ascomycètes, 1 Basidiomycète et 8 Déutéromycètes sur des végétaux en cours de dégradation et des bois flottants. Un manchon gélatineux a été observé autour des jeunes ascospores de *Quintaria lignatilis*.

KEY WORDS : Higher marine fungi, Lakshadweep Islands.

INTRODUCTION

The role of marine fungi in the decomposition of organic matter in the marine environment is well documented (Fell & Master, 1980). The occurrence and distribution of marine fungi from the Indian Ocean has been studied to a certain extent (Borse, 1988; Hyde, 1988, 1989, 1990; Hyde & Jones, 1988; Hyde et al., 1990; Jones & Kuthubutheen, 1989; Kohlmeyer, 1984; Jones & Hyde, 1990; Kohlmeyer & Volkman-Kohlmeyer, 1991b; Leong et al., 1991). However, nothing is known about the occurrence of marine fungi from the Lakshadweep Islands. The present study was carried out to know the occurrence and distribution of marine fungi from the Lakshadweep Islands (Laccadive Islands).

MATERIALS AND METHODS

The dead and decayed mangroves seagrasses and drift wood samples from the intertidal regions of Agatii, Androth, Cheriya, Kalpeni, Kavaratti, Kadmat and Minicoy Islands (Fig. 1) were collected in clean polythene bags during an oceanographic cruise to Lakshadweep Islands (R.V.G. Cruise No. 225, 5/2/92 to 20/2/92). The samples were examined for fungi after 7 to 10 days of incubation in a moist chamber. Identifications were made using standard keys and original descriptions. All the identified samples were deposited in the Taxonomy Reference Center at National Institute of Oceanography.

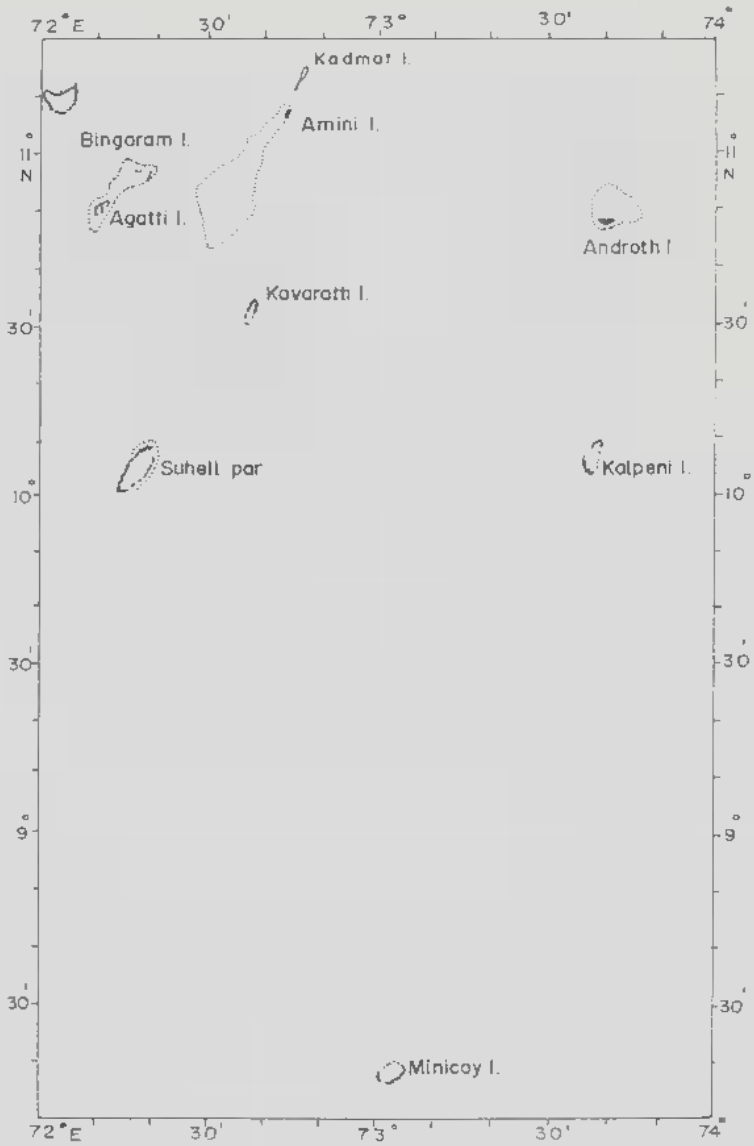


Fig. 1 - Map of Lakshadweep Islands (study area).

OBSERVATIONS

Ascomycetes

Ascocratera manglicola Kohlm.

Recorded on unidentified dead shoreline tree wood collected from Kadmat Island, (14/2/92 Herb. No. S.C.R. 340).

Arenariomyces majusculus Kohlm. et Volk.-Kohlm.

Recorded on the dead *Avicennia marina* (Forsk.) Vierh. wood heavily damaged by wood borers collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 324).

Biatriosporia marina Hyde et Borse

Recorded on dead *Avicennia marina* (Forsk.) Vierh. wood collected from Minicoy Island (10/2/92, Herb. No. S.C.R. 346, 350).

Dactylospora haliotrepha (Kohlm. et Kohlm.) Hafellner

Recorded on dead *Ceriops tagal* (Perr.) C.B. Rob. wood collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 327, 316).

Halosarpheia abonnis Kohlm.

Recorded on the dead *Avicennia marina* (Forsk.) Vierh. pneumatophore collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 331).

Halosarpheia marina (Cribb et Cribb) Kohlm.

Recorded on dead *Ceriops tagal* (Perr.) C.B. Rob. wood collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 312).

Halosphaeria quadricornuta Cribb et Cribb

Recorded on shoreline tree *Pemphis acidula* Forst. wood collected from Kalpeni Island (6/2/92 Herb. No. S.C.R. 304), eroded coconut tree from Kavaratti Island (8/2/92 Herb. No. S.C.R. 306a), unidentified drift wood collected from intertidal region of Kavaratti Island (8/2/92 Herb. No. S.C.R. 306b).

Leptosphaeria australiensis (Cribb et Cribb) Hughes

Recorded on dead shoreline tree *Scaveola taccada* (Gaertn.) Roxb. wood collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 313, 315), shoreline tree *Scaveola taccada* (Gaertn.) Roxb. wood collected from Cheryyam Island (6/2/92 Herb. No. S.C.R. 333).

Lignicola laevis Höhnk

Recorded on dead shoreline tree *Pemphis acidula* Forst. wood collected from Cheryyam Island (6/2/92 Herb. No. S.C.R. 341), Androth Island (17/2/92 Herb. No. S.C.R. 345).

Lindra thalassiae Orpurt et al.

Recorded on drifted seagrass *Thalassia testudinum* König. collected from Kalpeni Island (8/2/92 Herb. No. S.C.R. 308).

Lophiostoma mangrovei Kohlm. et Vittal

Recorded on dead bark of *Avicennia marina* (Forsk.) Vierh. collected from Minicoy Island (10/2/92 Herb. No. 352).

Lulworthia grandispora Meyers

Recorded on dead intertidal *Avicennia marina* (Forsk.) Vierh. wood collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 320).

Lulworthia spp. (spore length 300 to 40 µm)

Recorded on dead intertidal *Avicennia marina* (Forsk.) Vierh. stem and pneumatophores collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 323, 323a), dead shoreline tree *Pemphis acidula* Forst. wood collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 325).

Marinosphaera mangrovei Hyde

Recorded on dead shoreline tree *Scaveola taccada* (Gaertn.) Roxb. collected from Kadmat Island (14/2/92 Herb. No. S.C.R. 348), pneumatophores of *Ceriops tagal* (Perr.) C.B. Rob. collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 347).

Massarina thalassiae Kohlm. et Volkm.-Kohlm.

Recorded on dead shoreline tree *Pemphis acidula* Forst. wood collected from Kalpeni Island (6/2/92 Herb. No. S.C.R. 302), dead *Ceriops tagal* (Perr.) C.B. Rob. wood and pneumatophore collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 318, 328).

Massarina velatospora Hyde et Borse

Recorded on intertidal *Ceriops tagal* (Perr.) C.B. Rob. wood collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 337).

Massaria sp.

Recorded on shoreline tree *Scaveola taccada* (Gaertn.) Roxb. wood collected from Androth Island (16/2/92 Herb. No. S.C.R. 326).

Payosphaeria minuta Leong et al.

Recorded on dead intertidal *Ceriops tagal* (Perr.) C.B. Rob. wood and *Avicennia marina* (Forsk.) Vierh. wood collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 342, 343).

Quintaria lignatilis (Kohlm.) Kohlm. et Volkm.-Kohlm.

This species was first described under the genus *Trematosphaeria* (Kohlmeyer, 1984). Later on, this fungus was described as new genus *Quintaria* (Kohlmeyer & Volkmann-Kohlmeyer, 1991a) in both studies, there was no mention of the gelatinous sheath around the ascospore. But our collections from Lakshadweep, Maldives, Andaman and Nicobar Islands (when the fresh ascocarps are observed) show a distinct gelatinous sheath around the ascospores (Plate 1).

Recorded on dead intertidal *Ceriops tagal* (Perr.) C.B. Rob. wood collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 314), dead shoreline tree *Pemphis acidula* Forst. wood collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 319, 321).

Sarvoryella lignicola Jones et Eaton

Recorded on unidentified drift wood collected from Kavaratti Island (8/2/92 Herb. No. S.C.R. 309), dead intertidal shoreline tree *Scaveola taccada* (Gaertn.) Roxb. stem collected from Androth Island (16/2/92 Herb. No. S.C.R. 330).

Sarvoryella paucispora (Cribb et Cribb) Koch

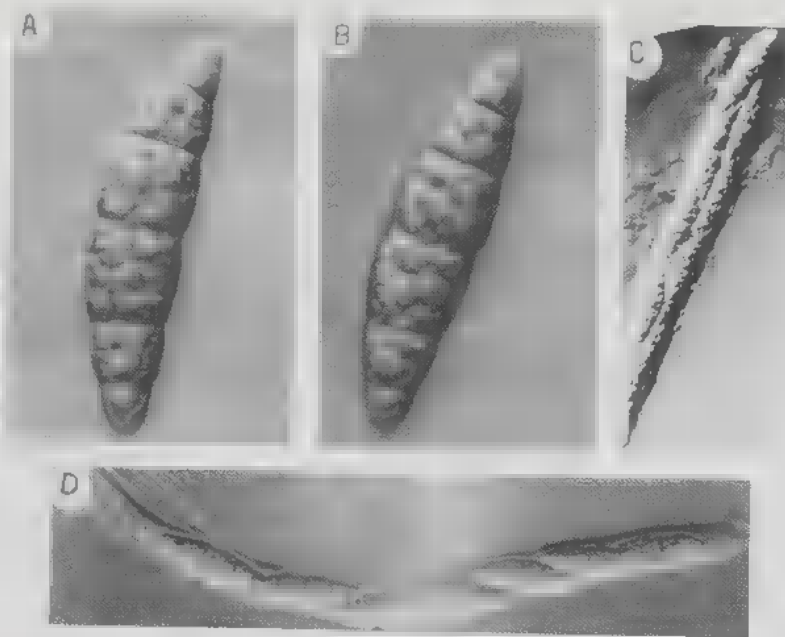


Plate I - A-D: *Quintaria lignatilis*. A-B: Gelatinous sheath around the ascospore (1100 x). C-D: Ascus (275 x).

Recorded along with *Monodicrys pelagica* (Johnson) Jones on unidentified drift wood collected from Kavaratti Island (8/2/92 Herb. No. S.C.R. 310).

Torpedospora radiata Meyers

Recorded on dead shoreline tree *Pemphis acidula* Forst. wood collected from Kalpeni Island (6/2/92 Herb. No. S.C.R. 305).

Verruculina enalia (Kohlm.) Kohlm. et Volkm.-Kohlm.

Recorded on dead shoreline tree *Pemphis acidula* Forst. wood collected from Kalpeni Island (6/2/92 Herb. No. S.C.R. 301) unidentified drift wood and *Pemphis acidula* Forst. wood collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 317, 322, 329), dead shoreline tree *Scaveola taccada* (Gaertn.) Roxb. wood collected from Cheryyam Island (6/2/92 Herb. No. S.C.R. 334).

Basidiomycetes

Halocyphina villosa Kohlm. et Kohlm.

Recorded on dead intertidal *Cerriops tagal* (Perr.) C.B. Rob. wood collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 338, 339).

Deuteromycetes

Cirrenalia basiminuta Ragukumar et al.

Recorded on drifted coconut frond collected from Kavaratti Island (8/2/92 Herb. No. S.C.R. 332).

Cirrenalia pygmaea Kohlm.

Recorded on dead intertidal pneumatophore of *Ceriops tagal* (Perr.) C.B. Rob. collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 347).

Humicola alopallonella Meyers et Moore

Recorded on dead intertidal pneumatophore of *Ceriops tagal* (Perr.) C.B. Rob. collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 347a).

Monodictys pelagica (Johnson) Jones

Recorded on unidentified drift wood collected from Kavaratti Island (8/2/92 Herb. No. S.C.R. 310).

Periconia prolifica Anast.

Recorded on dead intertidal shoreline tree *Pemphis acidula* Forst. wood collected from Kalpeni Island (6/2/92 Herb. No. S.C.R. 303).

Trichocladium achrasporum (Meyers et Moore) Dixon

Recorded along with *Humicola alopallonella* Meyers et Moore on dead pneumatophore of *Ceriops tagal* (Perr.) C.B. Rob. collected from Minicoy Island (10/2/92 Herb. No. S.C.R. 347a).

Zalerion maritimum (Linder) Anast.

Recorded along with *Cirrenalia basiminuta* Ragukumar et al. on coconut frond collected from Kavaratti Island (8/2/92 Herb. No. S.C.R. 332).

Zalerion varium Anast.

Recorded on unidentified drift wood collected from Kavaratti Island (8/2/92 Herb. No. S.C.R. 307).

ACKNOWLEDGEMENTS

I am thankful to Dr. A.G. Untawale Asst. Director for his encouragement, the Head Biological Oceanography Division N.I.O. for laboratory facilities, Prof. J. Kohlmeyer for reviewing the manuscript, Dr. Hyde for identification of *Q. lignatilis* and C.S.I.R. for financial assistance.

REFERENCES

- BORSE B.D., 1988 - Frequency of occurrence of ██████ fungi from Maharashtra coast, India. *Indian J. Mar. Sci.* 17: 165-167.
- FELL J.W. and MASTER I.M., 1980 - The association and role of fungi in mangrove detrital systems. *Bot. Mar.* 23: 257-263.
- HYDE K.D., 1988 - Studies on the tropical marine fungi of Brunei. *Bot. J. Linnean Soc.* 98: 135-151.
- HYDE K.D. and JONES E.B.G., 1988 - Marine mangrove fungi. *Mar. Ecol.* 9: 15-33.
- HYDE K.D., 1989 - Intertidal mangrove fungi from north Sumatra. *Canad. J. Bot.* 67: 3078-3082.

- HYDE K.D., 1990 - A comparison of intertidal mycota of five mangrove tree species. *Asian Mar. Biol.* 7: 93-107.
- HYDE K.D., CHALERMONGSE An. and BOONTHAVIKOON Th., 1990 - Ecology of intertidal fungi at Ranong mangrove, Thailand. *Trans. Mycol. Soc. Japan* 31: 17-27.
- JONES E.B.G. and KUTHUPUTHEEN A.J., 1989 - Malaysian mangrove fungi. *Sydowia* 41: 160-169.
- JONES E.B.G. and HYDE K.D., 1990 - Observation on poorly known mangrove fungi and a nomenclatural correction. *Mycotaxon* 37: 197-201.
- KOHLMEYER J., 1984 - Tropical marine fungi. *Mar. Ecol.* 5: 329-378.
- KOHLMEYER J. and VOLKMANN-KOHLMEYER B., 1991a - Illustrated key to the filamentous higher marine fungi. *Bot. Mar.* 34: 1-61.
- KOHLMEYER J. and VOLKMANN-KOHLMEYER B., 1991b - Marine fungi of Queensland, Australia. *Austral. J. Mar. Freshwater Res.* 42: 91-99.
- LEONG W.F., TAN T.K. and JONES E.B.G., 1991 - Fungal colonization of submerged *Bruguiera cylindrica* and *Rhizophora apiculata* wood. *Bot. Mar.* 34: 69-79.

